♲EPA

Permit Compliance System

Executive Summary

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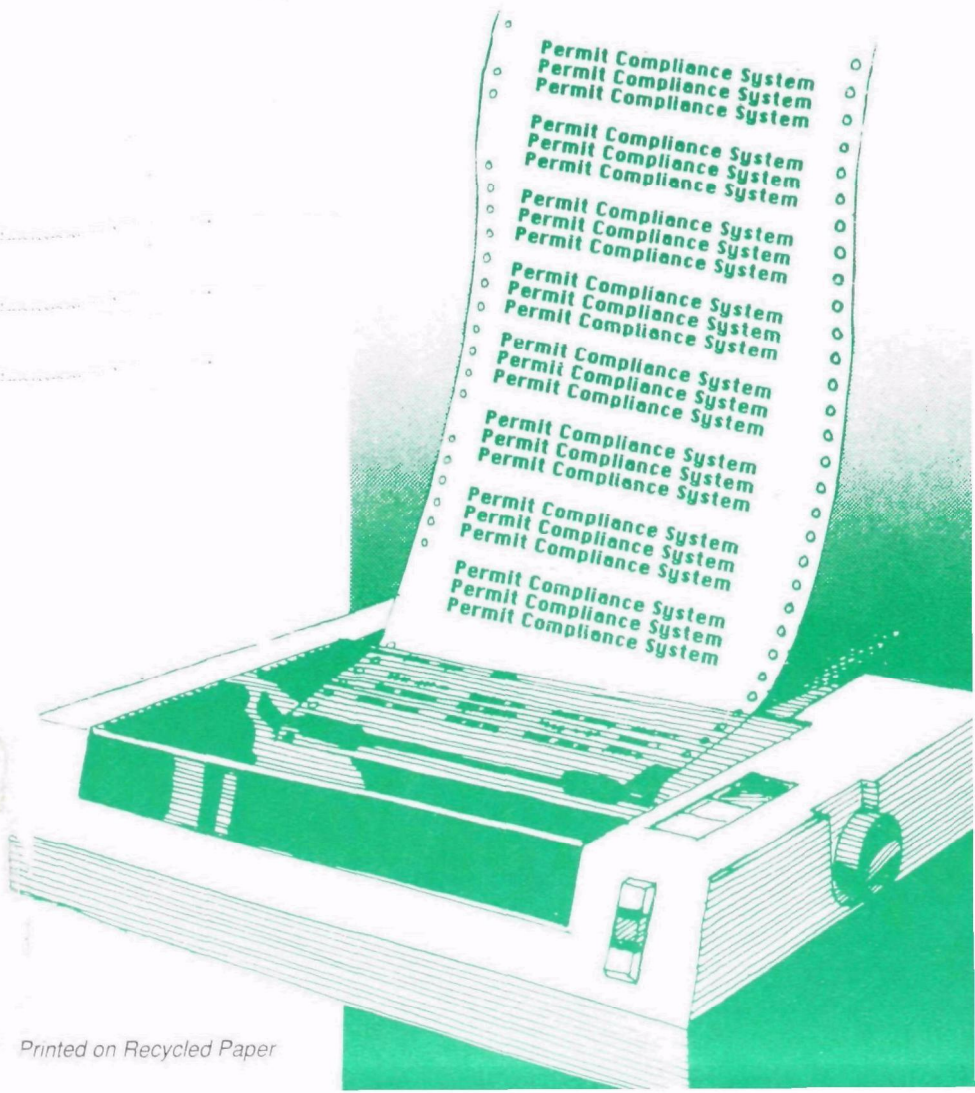Permit Compliance System

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This **Executive Summary** of the Permit Compliance System (PCS) briefly describes the information that PCS contains and the capabilities of PCS to support the diversified needs of its users.

To meet the informational needs of the National Pollutant Discharge Elimination System (NPDES) program under the Clean Water Act, the Environmental Protection Agency Office of Water Enforcement and Permits (OWEP) developed the Permit Compliance System (PCS) for tracking permit, compliance, and enforcement status.

PCS is a computerized management information system for automated entry, updating, and retrieval of information on NPDES permit-holding facilities.

Under the NPDES program, PCS keeps extensive records on more than 65,000 active water-discharge permits that have been issued to facilities throughout the nation.

Each permit record may contain many items of information, which:

- identifies and describes the facility to which the permit has been granted

- specifies the pollutant discharge limits for that facility

- records the actual amounts of pollutants measured in the facility's waste water discharges

- tracks the facility's history of compliance with construction, pollutant limits, and reporting requirements

PCS is designed using a data base management system (DBMS) called ADABAS (Adaptable Database). DBMS is an advanced concept in computer system data structure and storage. PCS resides on the EPA IBM mainframe computer located in Research Triangle Park, North Carolina. Users throughout the country may access PCS through EPA's telecommunications network.

FUNCTIONS OF PCS

Functions of PCS include:

- Maintenance of an inventory of all NPDES permit applications and permit issuance statuses for approximately 65,000 active permittees.

- Forecasting of due dates for reports related to compliance schedule events.

- Maintenance of inspection-related information.

- Maintenance of effluent limitations contained in NPDES permits.

- Maintenance of effluent self-monitoring data of permittees (Discharge Monitoring Reports).

- Automatic detection of effluent and compliance schedule violations.

- Maintenance of data on enforcement actions and automatic generation of the NPDES Quarterly Noncompliance Reports.

- Production of management reports relating to all of the above information; these reports allow regulatory authorities to maintain an overview of the progress of the NPDES program.

WHO PCS SUPPORTS

PCS is a dynamic system that supports the NPDES program at the state, regional and national levels. The system has been enhanced over the years to better support the diverse needs of its users.

Within the 10 EPA regional offices and 38 NPDES states, PCS supports over 600 state/regional/headquarters users. These users are made up of enforcement, permit, data processing, and planning personnel, and program managers.

With its flexible reporting features, PCS supports requests for information from Congress and state legislatures, as well as Freedom of Information requests submitted by the public.

The development of the system has been directed by the PCS Steering Committee. This committee and its companion User Group are made up of state, regional, and headquarters representatives who continually explore indepth the technical data processing and management informational needs of States and EPA.


PCS Supports Over 600 Users Nationwide

*PCS is a National System with over 600 users in ten EPA regions and 38 delegated states.*
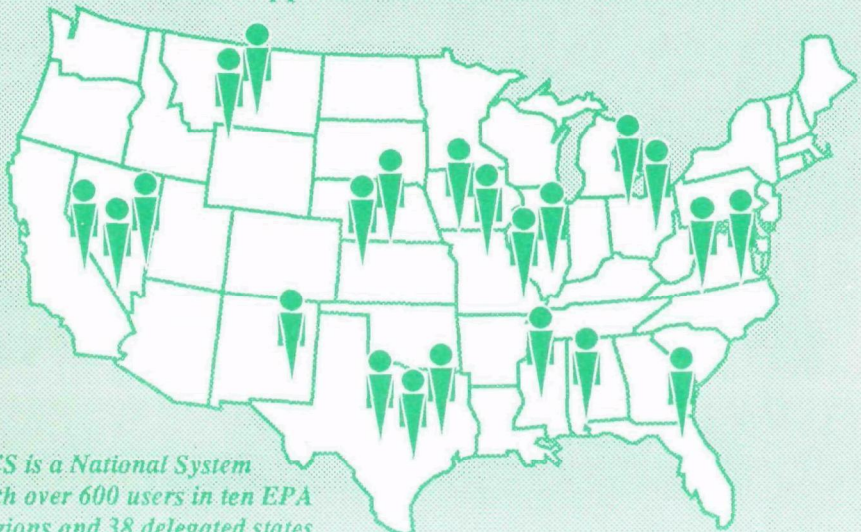
As the national inventory for NPDES permit issuance and compliance/enforcement data, PCS has earned the confidence of users in EPA regional offices and its delegated NPDES states. At present, PCS is one of EPA's largest computer systems, with more than **12 million individual records** in its data base. The 12 million records are populated with more than **200 million fields** of information.

PCS is also currently one of EPA's most widely used computer systems. More than **seven thousand data retrievals** take place monthly and nearly **six million data changes** occur annually.

PCS Performs Thousands of Data Retrievals Monthly (per thousand)
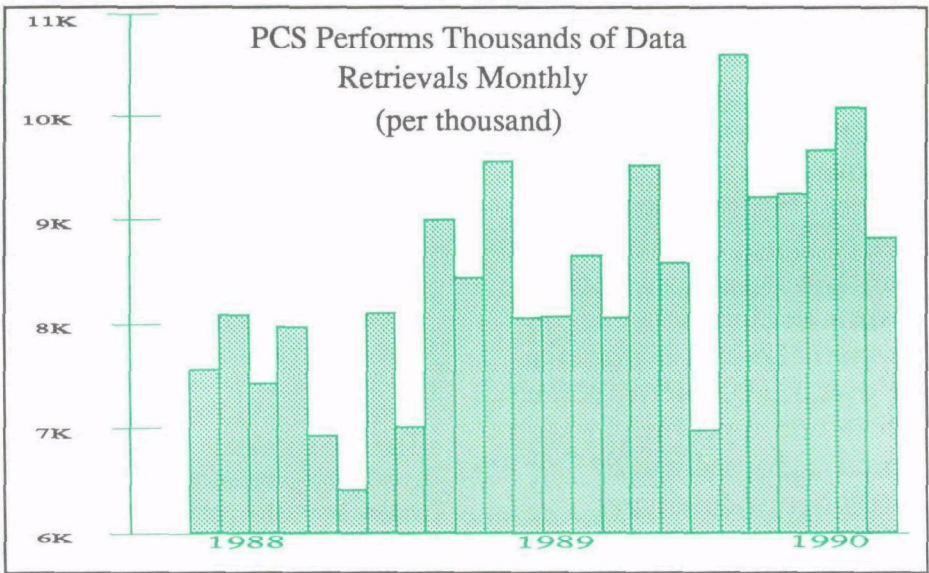
The state, regional, and headquarters PCS users request an average of more than seven thousand data retrievals monthly and submit an average of nearly six million data changes annually. Since its inception PCS has continually grown, as demonstrated by the increase in the number of records it stores.

PCS Record Volume Increases Yearly (per million)
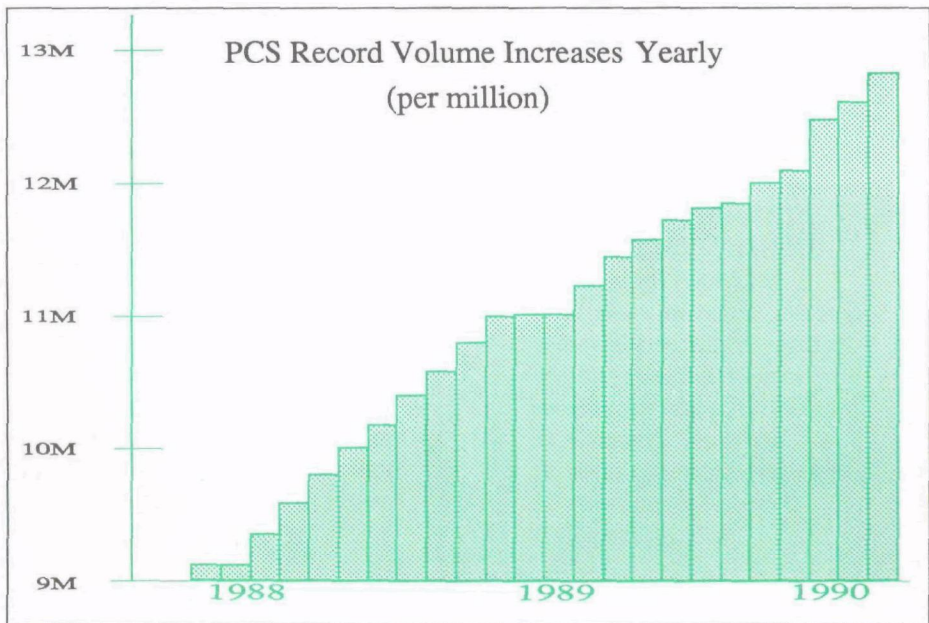
The PCS data base is an automated file of NPDES permits. In 1990, there are more than 65,000 active NPDES permits being tracked by the system. Additionally, PCS contains historical information for over 50,000 inactive permits. The information stored for each permit is grouped into **13 categories or data types.** Within each data type, there are individual pieces of information called data elements or fields. Presently, **571 data elements** are defined within PCS.

The PCS data types are:

- **PERMIT FACILITY** — general information for a facility, such as facility name and address, type of facility, industrial classification, etc.

- **PERMIT EVENT** — information to assist in tracking events that relate to permit issuance, including the date of the permit issuance, the date of the permit expiration, comments, etc.

- **COMPLIANCE SCHEDULE** — milestone event information that may be required of a facility, including submitted facility plans, end of construction dates, hired certified operator, etc.

- **COMPLIANCE SCHEDULE VIOLATION** — information regarding violations of the compliance schedule, such as failure to meet a milestone date, failure to submit required reports, date violation resolved, etc.

- **OUTFALL SCHEDULE** — discharge monitoring reporting schedule information and descriptions of outfall locations, including initial EPA and State submission dates, types of effluent waste, pipe location, etc.
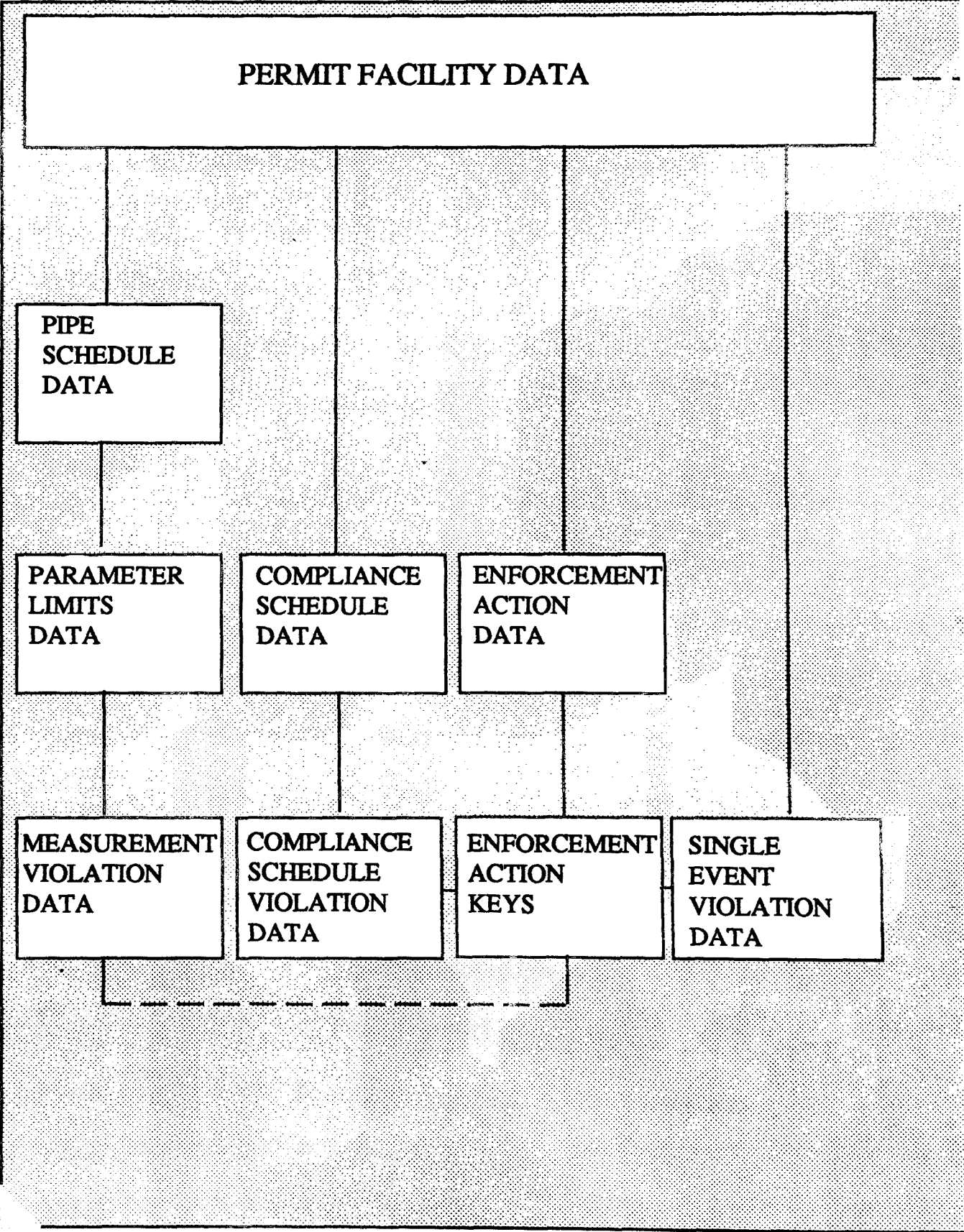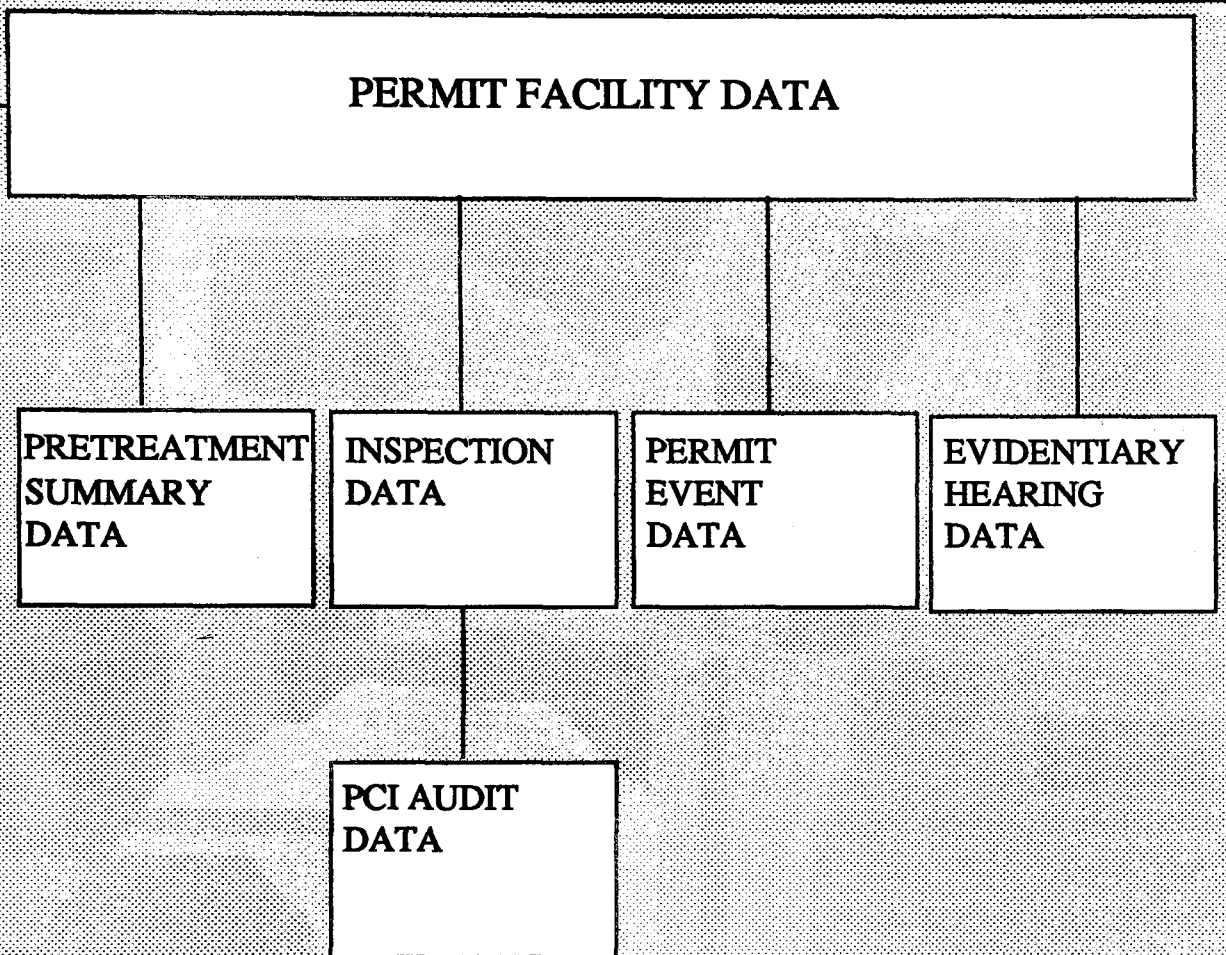
THE 13 PCS DATA TYPES

• **PERMIT LIMITS** — effluent parametric limit requirements associated with each outfall of a facility, including the parameter, quantity and concentration average and maximums, concentration minimums, etc.

• **DISCHARGE MONITORING REPORT** — detailed information on reported measurement values for effluent limits, including those that are in violation of established limits for the permit. Information contained includes the type of violation (if any), concentration and quantity values, QNCR indicators, etc.

• **SINGLE EVENT VIOLATION** — detailed information on violations not related to compliance schedules or effluent limits, such as the violation event code, date of violation, date violation resolved, etc.

• **ENFORCEMENT ACTION** — detailed information about enforcement actions taken in response to violations, such as the events in violation, the enforcement action type and the date taken, administrative penalty information, etc.

• **INSPECTION** — information gathered at inspections performed at a permitted facility, such as the performing inspector, inspection scheduling information, inspector comments, etc.

• **PRETREATMENT AUDIT/ PCI** — detailed information about pretreatment that was gathered during an inspection or audit, such as pretreatment coordinator name, annual pretreatment budget, number of significant industrial users not inspected, etc.

• **PRETREATMENT PERFORMANCE SUMMARY** — information gathered as a part of the Pretreatment Annual Report, such as the number of administrative orders issued, number of judicial actions taken, amount of penalties, etc.

• **EVIDENTIARY HEARING** — information concerning evidentiary hearings, which are held when permittees wish to appeal or negotiate limits or compliance schedule requirements, including evidentiary hearing event type, date hearing was granted, settlement date, etc.

| | PERMIT FACILITY DATA | | |

| PIPE SCHEDULE DATA | | | |

| PARAMETER LIMITS DATA | COMPLIANCE SCHEDULE DATA | ENFORCEMENT ACTION DATA | |

| MEASUREMENT VIOLATION DATA | COMPLIANCE SCHEDULE VIOLATION DATA | ENFORCEMENT ACTION KEYS | SINGLE EVENT VIOLATION DATA |

PERMIT FACILITY DATA

| PRETREATMENT SUMMARY DATA | INSPECTION DATA | PERMIT EVENT DATA | EVIDENTIARY HEARING DATA |

PCI AUDIT DATA

The Permit Facility data type is the foundation for all information contained within PCS. Each data type is directly related to a permitted facility by the NPDES permit number. For example, all Inspection data is related to a permitted facility which has undergone an inspection. Each Inspection record contains, as part of it's access key, the NPDES permit number. Some data types also are related to one another in a hierarchical structure. Such a structure allows information to be stored on the data base without unnecessary repetition of data.

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The informational needs of PCS users are as diverse as the users themselves. Their needs range from detailed, facility-related data required by state and regional compliance personnel, to statistical summary data required by program directors to gauge overall program effectiveness.

With its conversion to ADABAS in 1985, PCS achieved new flexibility, speed, ease of use, and responsiveness that significantly augmented its value as a resource and management tool for administration of the water enforcement and permit program. Specifically, PCS offers:

• **Flexibility** - PCS provides multiple data entry and reporting systems. This offers each user the most accommodating method of entering information into and gathering information from the data base.

• **Speed** - When information is needed **quickly**, the availability of "on-line" processing allows an individual's informational needs to be described with a few simple keyboard commands, transmitted directly to the computer and answered on a screen display in seconds instead of hours or overnight.

• **Ease of Use** - The direct "dialogue" between the user and PCS is an effective teaching tool that builds users' skills and confidence quickly by providing immediate reinforcement of successful procedures and immediate identification of errors through screen messages. As a result, new users can draw on a wide range of data in their first session. Management personnel, who do not use PCS daily, are offered processing capabilities that allow information to be retrieved quickly and easily.

• **Responsiveness** - With increasing proficiency in system use, the user can exercise increasing control over the selection and format of data requested from PCS. The experienced user can begin to design reports tailor-made to specific applications at his own pace.

Direct "Dialogue" Communication

PROCEDURE
COMPLETED
SUCCESSFULLY
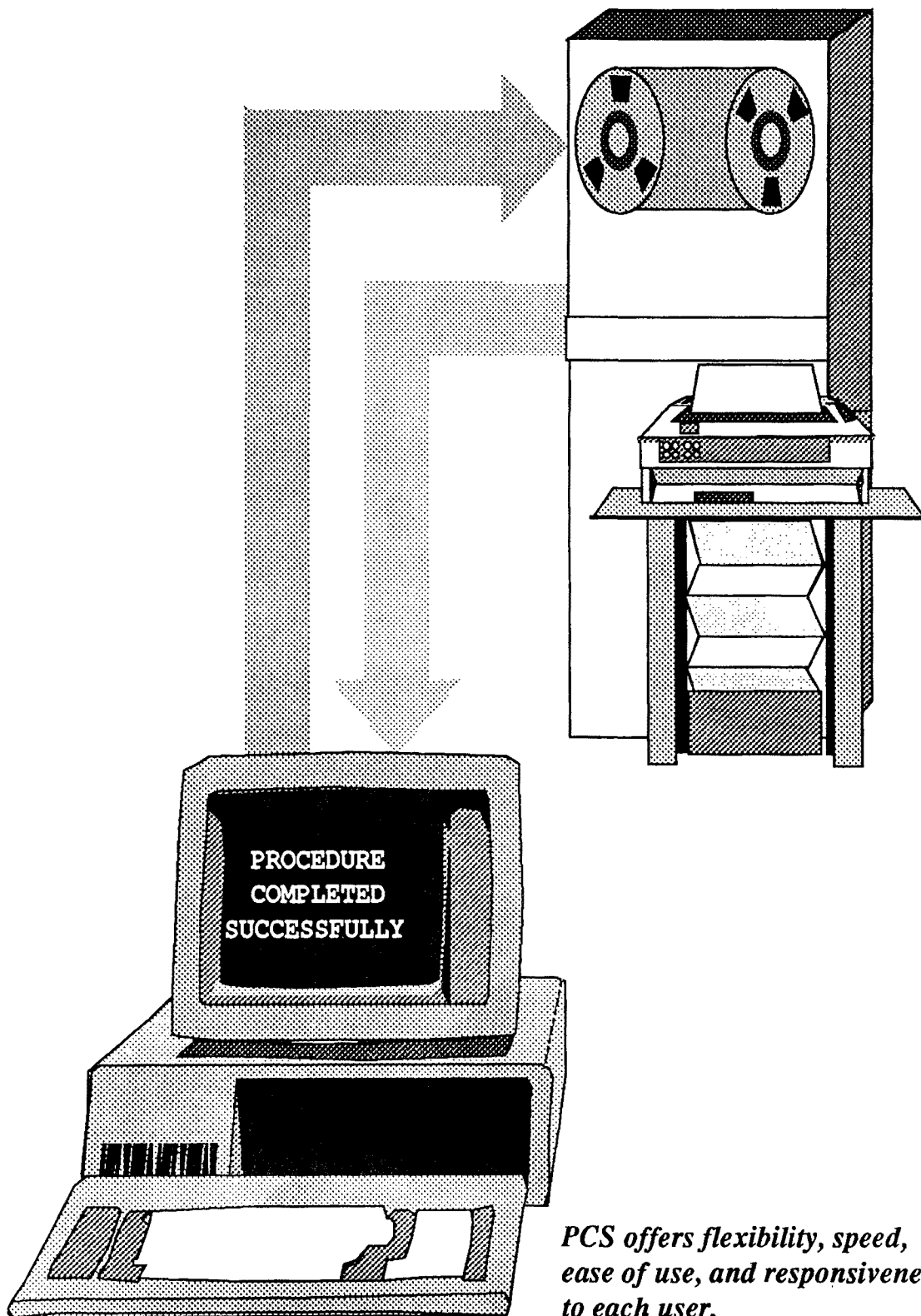
PCS offers flexibility, speed, ease of use, and responsiveness to each user.

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Violation Detection Processing

PERMIT

FORM _

DMR

FORM _

ENFORCEMENT

FORM _

ACTION

PCS
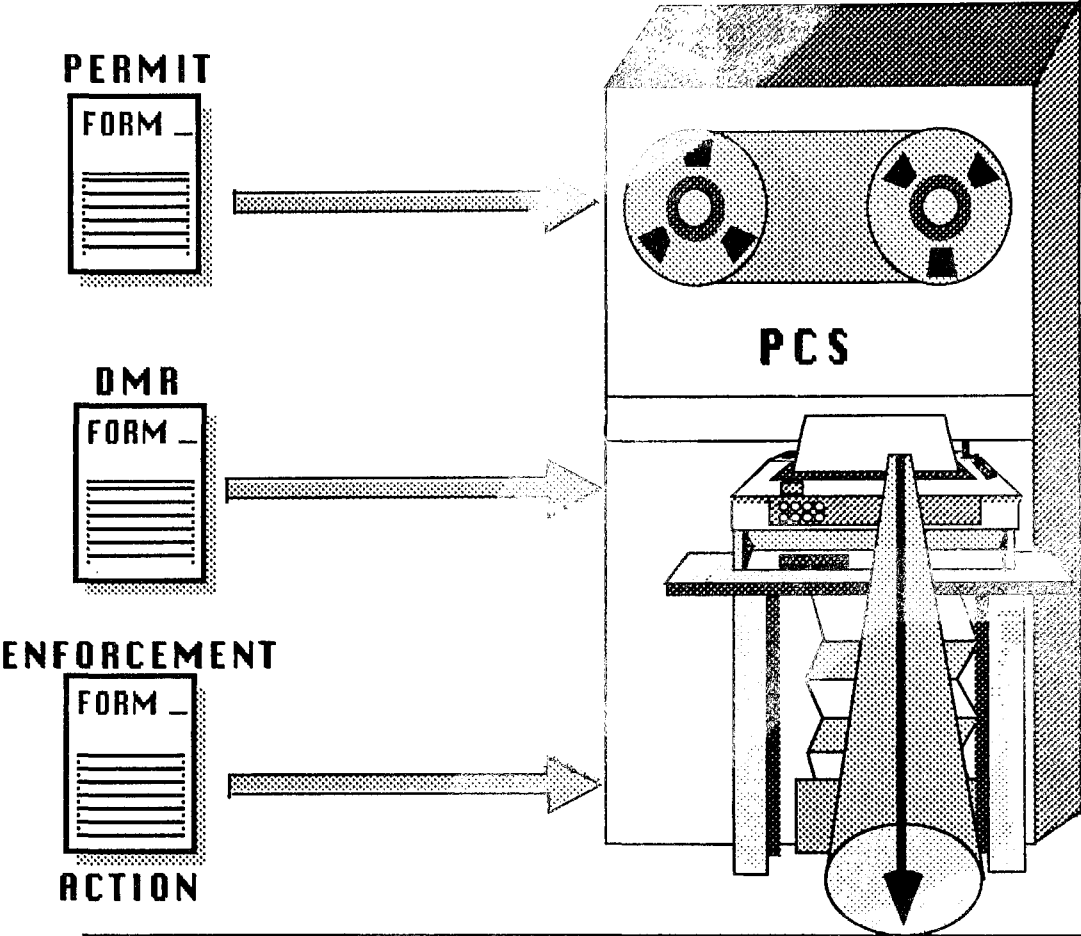
QUARTERLY NONCOMPLIANCE REPORT   **QNCR**

VIRGINIA

NAME
LOCATION

NPDES NUMBER	GRANT	LIMIT	VIOLATION		ENFORCEMENT	
INSTANCE OF NONCOMPLIANCE		RNC	DATE	ENFORCEMENT ACTION	DATE	STATUS

				MCP SCHEDULE AO-EO	(EPA) 05/23/88	
				DOCKET NUMBER:88-18		
BOD, 5-DAY	(20 DE	001A	12/31/87-05/31/89			RP
SOLIDS, TOTAL	SUSPENDED	001A	12/31/87-05/31/89			RP

PCS identifies and tracks polluters of the Nation's waterways through automated violation detection processes. The system automatically reviews millions of records each month and determines the compliance status of each facility according to the requirements in the individual permit.

- **Compliance Schedule Violations** are automatically determined as PCS reviews compliance schedule events and reporting schedules set by the appropriate permit issuing authority.

- **Discharge Monitoring Report (DMR) Effluent Limit Violations** are automatically determined by PCS when a Discharge Monitoring Report is received and information regarding the report is entered into the data base. PCS checks the DMR limit information for completeness and determines whether measured concentrations and quantities exceed the limits set in the permit.

- **Discharge Monitoring Report (DMR) Reporting Violations** are based upon the DMR outfall schedules set in the permit. A reporting violation is automatically generated if a DMR report is due but has not been submitted by a facility.

- **Single Event Violations** are maintained within the data base. These violations are not related to compliance schedules or parametric limits. These violations are usually entered into the PCS data base by state or regional NPDES personnel.

- **Reportable Noncompliance Violations (RNC)** are determined automatically. For each facility, PCS reviews compliance schedule, single event, Discharge Monitoring Report reporting, and Discharge Monitoring Report effluent limits violations and associated enforcement actions, determining the significance of each violation and the compliance status of the facility. All reportable noncompliant facilities and their associated violations are reported on the Quarterly Noncompliance Report.

To ensure the quality of data entered into PCS, each update transaction passes two levels of edit checking. The first level verifies the completeness and validity of data in each transaction. Required fields are checked for values, numeric fields are checked for numbers, code fields are verified against valid PCS values. The second level verifies the transaction's relationship to existing data for that facility. For example:

An outfall schedule record cannot be added unless the facility record exists.

A parameter limit record cannot be deleted if associated discharge monitoring report records exist.

Accepted transactions are placed into a holding file to be processed in the next semi-weekly update. Transactions passing both levels of edit checking update the PCS data base.
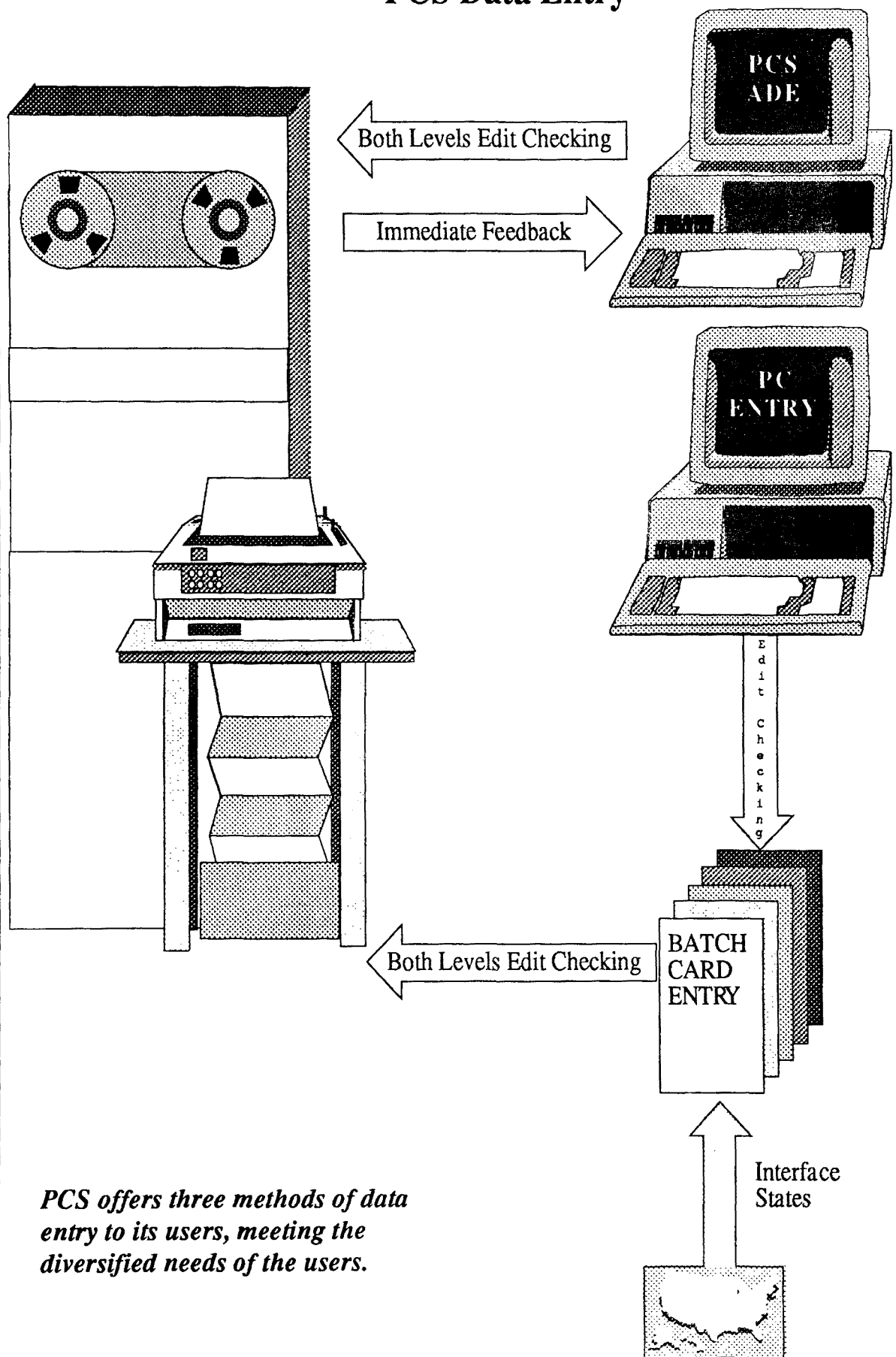
To meet the diverse needs of its users, PCS offers three methods for data entry. These methods are:

PCS DATA ENTRY METHODS

• **PCS-ADE**, an on-line data entry system, provides immediate feedback to the user as information is being entered. Both levels of edit checking are performed. PCS-ADE allows large amounts of data to be entered rapidly and accurately.

• **PC Entry**, a PC based data entry system, allows large amounts of PCS data to be entered quickly without accruing "timesharing" costs at NCC. It performs minimal edit checking. All transactions generated by this method are submitted to the Batch Card Entry system for complete edit checking.

• **Batch Card Entry**, a batch data entry system, provides an easy method for states that do not actively use PCS to submit data to the system. Batch Card Entry performs both levels of edit checking. Feedback to the user is provided through "edit reports" listing accepted transactions, rejected transactions, and any associated informational and error messages.

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PCS Data Entry

Both Levels Edit Checking

Immediate Feedback

PCS
ADE

PC
ENTRY

Edit Checking

BATCH
CARD
ENTRY

Both Levels Edit Checking

Interface
States

PCS offers three methods of data entry to its users, meeting the diversified needs of the users.

PCS REPORTING

PCS offers two basic modes of reporting: **on-line** and **batch**. Through these modes, information may be gathered from the data base and viewed on the terminal screen, or a "hard copy" of the gathered information may be printed.

On-line reporting means that an individual's informational needs can be described with a few simple keyboard commands, transmitted directly to the PCS data base, and answered on a screen display in **seconds**.

Batch reporting means that an individual's informational needs can be described through submitted requests and answered on a "hardcopy" printout including as much detail as requested.

Three types of PCS report generation are available, including the following:

PREDEFINED REPORTS

Predefined Reports offer the inexperienced user a simple way of gathering needed information from PCS. These reports are system-formatted reports with rows and columns predefined. These "standardized" reports may be accessed through PCS's Generalized Retrieval and Inquiry subsystems. There are 23 types of predefined reports. Two examples include:

Facility Report provides a comprehensive description of each selected permitted facility. It includes general facility information and twelve optional detailed facility informational categories. Optional information includes compliance schedule and violation information, enforcement action information, pipe schedule information, etc.

Quarterly Noncompliance Report (QNCR) provides a list of all active major facilities that have instances of Reportable Noncompliance within the current reporting period. The report includes the name, location, and NPDES number of each permitted facility reported; the instances of Reportable Noncompliance; and any enforcement actions taken.

MANAGEMENT REPORTS

Management Reports offer managers quick access to information specific to their needs. These reports are generated through PCS's Manager's Inquiry (MINQ), Personal Assistance Link (PAL), and Generalized Retrieval subsystems. Examples of the 15 kinds of Management Reports available in PCS are:

Moving Base Report provides quantitative measurements of actual counts and percentages of facilities that are in significant noncompliance with their compliance schedules, compliance reporting requirements, effluent limits, or effluent reporting requirements.

Manager's Quarterly Noncompliance Report (QNCR) provides managers a list of facilities that are in Significant Noncompliance during the QNCR quarter. This report includes facilities with effluent, DMR non-receipt, compliance schedule, and compliance schedule reporting violations.

USER DESIGNED REPORTS

User Designed Reports offer flexibility to the experienced user regarding the types and detail of information being reported and the format of the resulting report. Reports may be defined through PCS's Inquiry and Generalized Retrieval subsystems. Available report options allow only needed information to be reported. A User Designed Report may be like one of the following:

Quick Look Report provides users a way of defining reports that allows the user to control the content and design of the report. It allows data to be reported from any of the data types in PCS.

Quick File Extract provides users a way to transfer user-defined information from a PCS data type to a file on a storage disk at NCC. The user may then manipulate the information using various programs at NCC, such as SAS, or may download the information to a PC.

PCS supports its users in a variety of ways. **Telephone support** is provided to assist with operational questions and problems. **Training activities** are provided through EPA headquarters and regions. **Resource materials** are available for attaining further operational information.

The PCS User Support Line is available to anyone who is seeking assistance. This line may be reached at (202)475-8529.

EPA Headquarters and regional training activities include both classroom instruction and personal computer training presentations. Classroom instruction is offered throughout the country on a continuing basis and includes Basic PCS Training, Advanced PCS Training (QNCR), Generalized Retrieval Training, Manager's Overview, and ad hoc classes of concentrated assistance. Training presentations currently available include: an Overview of the Permit Compliance System, an Overview of Manager's Inquiry, and an Overview of PCS PAL.

Resource materials in the form of user guide documentation and PCS pamphlets are available to assist in daily operations of PCS and to provide information regarding the system.

Available user guide documentation includes:

- Inquiry User's Guide

- Generalized Retrieval User's Guide

- Data Entry, Edit and Update User's Guide

- Data Element Dictionary

- PCS-PAL User's Guide

- Guide to NCC Services

Two PCS pamphlets are currently available: PCS Overview and QNCR.

If you have questions regarding management issues, or would like to obtain further information regarding the Permit Compliance System, please call the Office of Water, Enforcement and Permits Division, Compliance Information and Evaluation Branch at (202) 475-8313.